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OPTIMIZED PIEZOELECTRIC RESONATOR-BASED NETWORKS  
AND ASSOCIATED METHOD

## ABSTRACT

5 The method comprises decomposing an original resonator within a network into a pair of series connected resonators to add an additional connecting electrode to the network. The pair of resonators are series connected by a shared electrode. To preserve the original  
10 electrical characteristics of the network, the composite characteristics of the series connected resonators are chosen to match those of the original resonator. With this method, the additional electrode is placed on a surface of the piezoelectric material opposing the surface  
15 to which the shared electrode is mounted. The method allows for the addition of an electrode to a piezoelectric resonator-based network so that the electrodes which connect the network to other circuitry may be placed where desired. This may be on the upper surface of the  
20 piezoelectric material for connection to discrete components or on the lower, buried surface for connection to buried layers of an adjacent integrated circuit.